

ANGULAR 8 TUTORIAL WEEK 13

PLAY WITH OBJECTS

Pada project week ini, kita akan membuat sebuah form untuk submit Superhero dan sebuah halaman voting yang bisa *sorting* otomatis. Silahkan ikuti langkah-langkah tutorial berikut secara bertahap dan minta penjelasan dari asisten lab apabila anda tidak mengerti apa yang dikerjakan, karena modul berikut sangat menunjang proyek akhir anda.

Pada week ini, diasumsikan semua telah menginstall Angular dan Node JS pada week lalu.

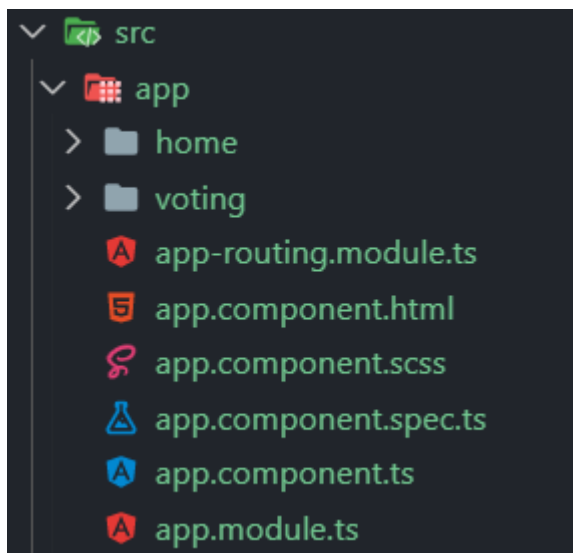
Let's start it

Masuk ke direktori kesukaan anda lewat **CMD** atau **terminal** kesukaan anda. Ketikkan perintah **ng new second-app** . Kita akan membuat project bernama **second-app**.

Pasang **angular routing** dan gunakan **SCSS** untuk styling kita.

Setelah project terbentuk, buatlah halaman home dan halaman voting menggunakan **ng generate**. *Lihat modul week kemarin untuk lebih detailnya.*

Kira-kira beginilah struktur *project* kita untuk minggu ini.

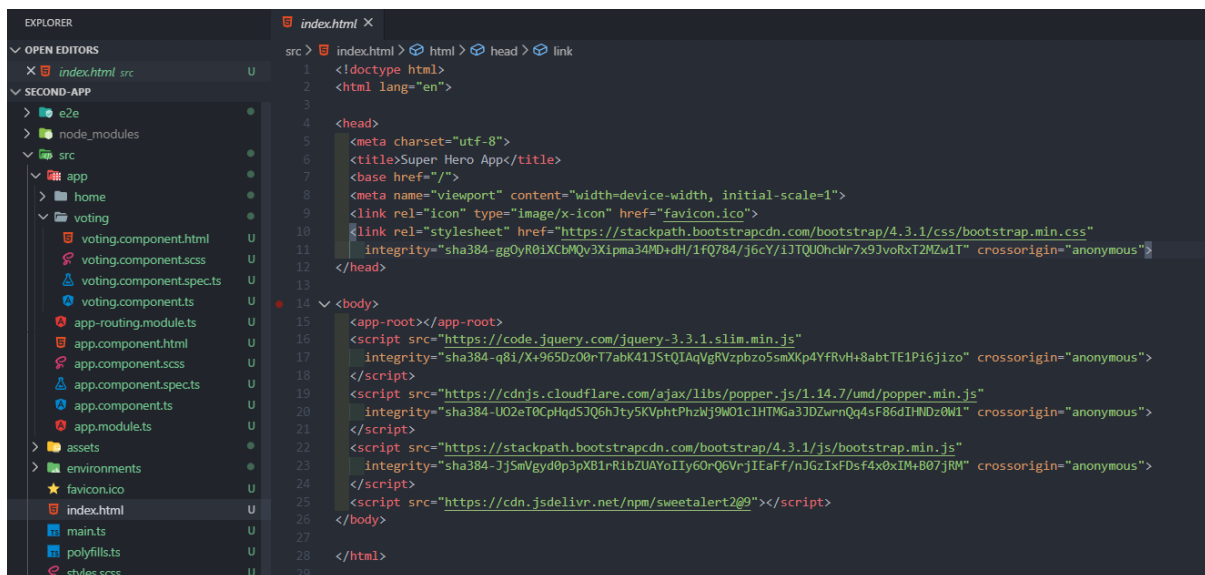


Ubah halaman **index.html** seperti pada gambar di bawah ini.

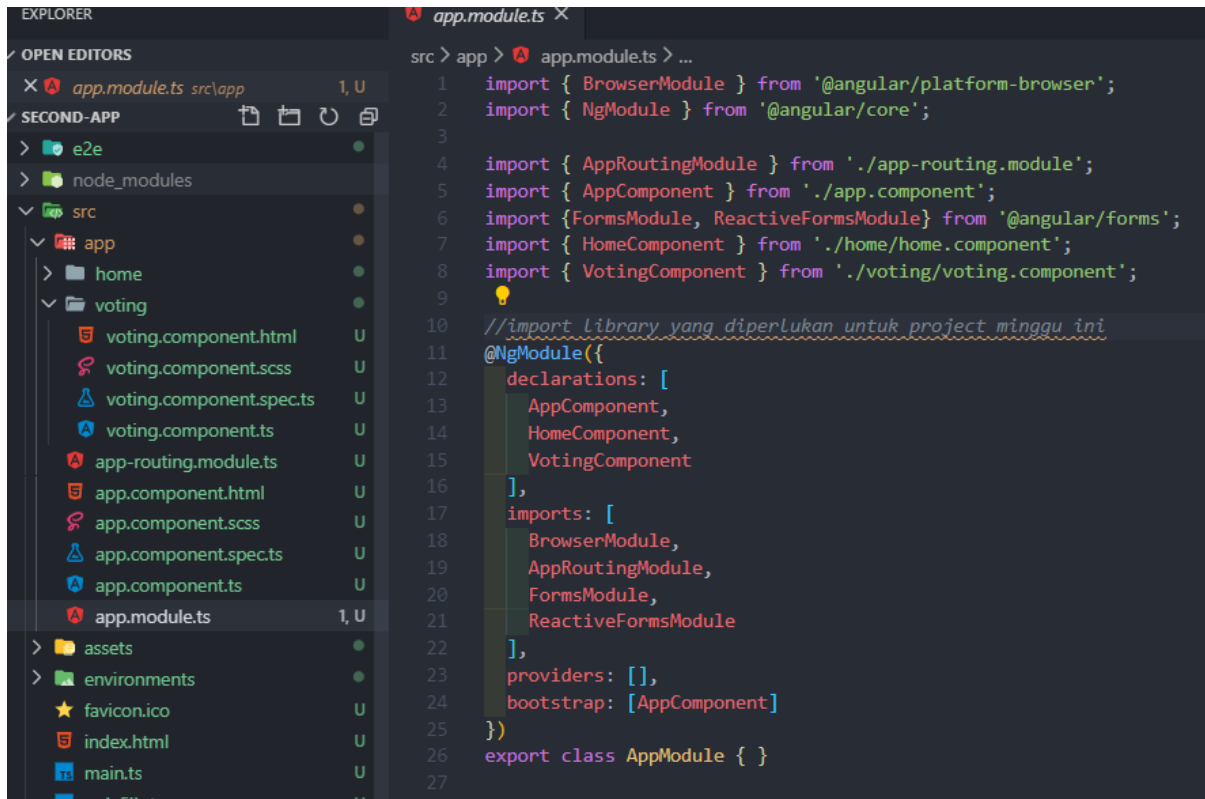
Gunakan CDN bootstrap berikut untuk di-copy ke **index.html** seperti gambar di bawah.

```
<link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css"
integrity="sha384-
ggOyR0iXCbMQv3Xipma34MD+dH/1fQ784/j6cY/iJTQUOhcWr7x9JvoRxT2MZw1T"
crossorigin="anonymous">
```

```
<script src="https://code.jquery.com/jquery-3.3.1.slim.min.js" integrity="sha384-
q8i/X+965Dz00rT7abK41JStQIAqVgRVzpbzo5smXKp4YfRvH+8abtTE1Pi6jizo"
crossorigin="anonymous"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.7/umd/popper.min.js"
integrity="sha384-
U02eT0CpHqdSJQ6hJty5KVphtPhzWj9WO1c1HTMga3JDZwrnQq4sF86dIHNDz0W1"
crossorigin="anonymous"></script>
<script
src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js"
integrity="sha384-
JjSmVgyd0p3pXB1rRibZUAYoIIy60rQ6VrjIEaFf/nJGzIxFDsf4x0xIM+B07jRM"
crossorigin="anonymous"></script>
```



Sebelum kita memulai *project* kita, kita akan mengimport terlebih dahulu library yang diperlukan. Ubah kodingan pada **app.module.ts** seperti pada gambar di bawah.

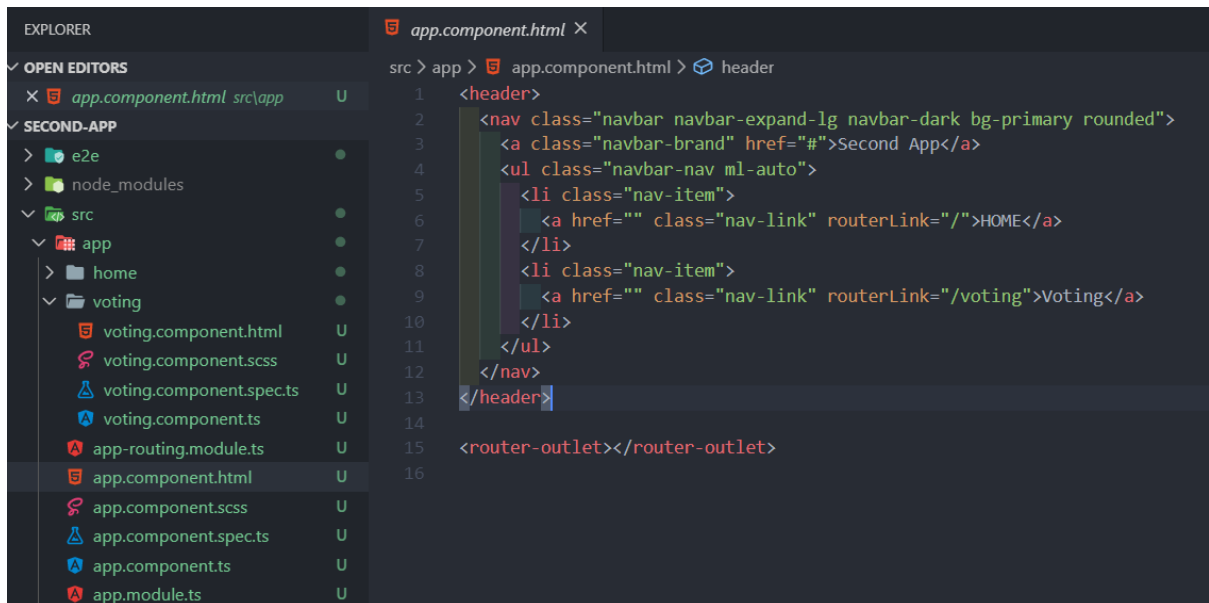


```
EXPLORER
src
  app
    home
    voting
      voting.component.html
      voting.component.scss
      voting.component.spec.ts
      voting.component.ts
    app-routing.module.ts
    app.component.html
    app.component.scss
    app.component.spec.ts
    app.component.ts
    app.module.ts
  assets
  environments
  favicon.ico
  index.html
  main.ts
  test.ts

OPEN EDITORS
app.module.ts src/app 1, U

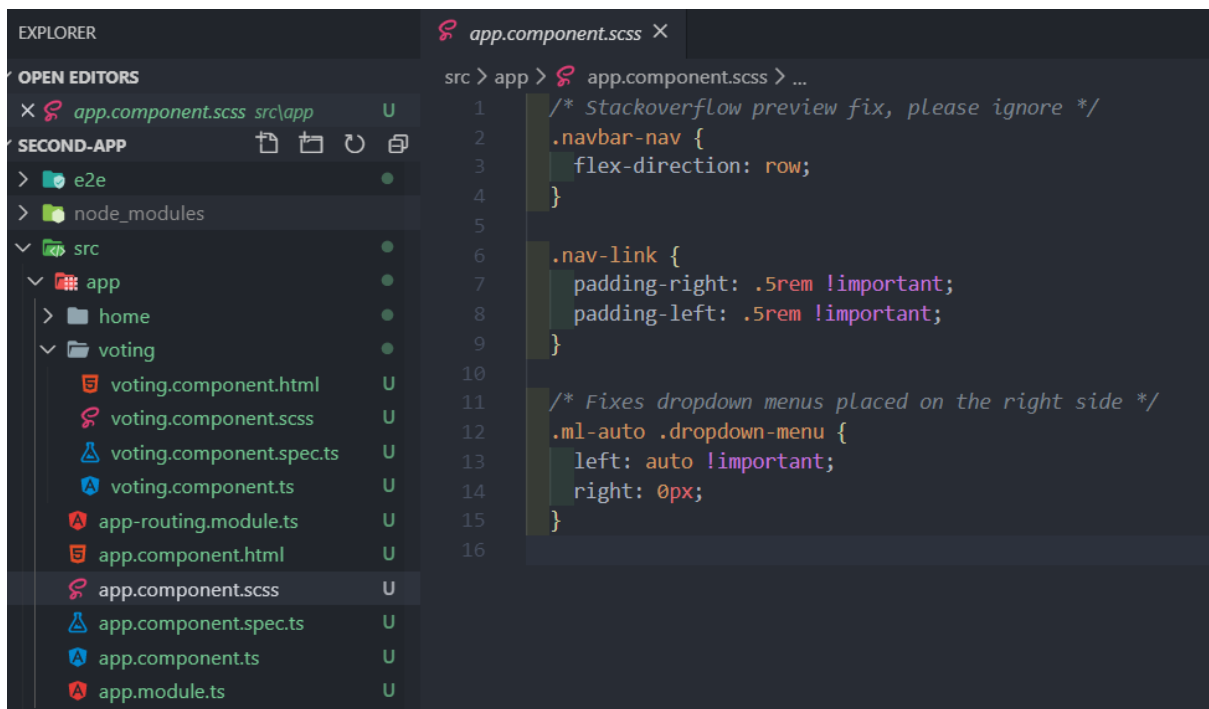
src > app > app.module.ts > ...
1 import { BrowserModule } from '@angular/platform-browser';
2 import { NgModule } from '@angular/core';
3
4 import { AppRoutingModule } from './app-routing.module';
5 import { AppComponent } from './app.component';
6 import { FormsModule, ReactiveFormsModule } from '@angular/forms';
7 import { HomeComponent } from './home/home.component';
8 import { VotingComponent } from './voting/voting.component';
9
10 //import library yang diperlukan untuk project minggu ini
11 @NgModule({
12   declarations: [
13     AppComponent,
14     HomeComponent,
15     VotingComponent
16   ],
17   imports: [
18     BrowserModule,
19     AppRoutingModule,
20     FormsModule,
21     ReactiveFormsModule
22   ],
23   providers: [],
24   bootstrap: [AppComponent]
25 })
26 export class AppModule { }
27
```

Berikutnya, kita akan membuat navbar di **app.component.html**, silahkan ubah kodingannya menjadi seperti pada gambar.



```
1 <header>
2   <nav class="navbar navbar-expand-lg navbar-dark bg-primary rounded">
3     <a class="navbar-brand" href="#">Second App</a>
4     <ul class="navbar-nav ml-auto">
5       <li class="nav-item">
6         <a href="" class="nav-link" routerLink="/">HOME</a>
7       </li>
8       <li class="nav-item">
9         <a href="" class="nav-link" routerLink="/voting">Voting</a>
10      </li>
11    </ul>
12  </nav>
13 </header>
14
15 <router-outlet></router-outlet>
16
```

Untuk *stylingnya*, silahkan ubah file **app.component.scss** nya seperti gambar di bawah.



```
1 /* Stackoverflow preview fix, please ignore */
2 .navbar-nav {
3   flex-direction: row;
4 }
5
6 .nav-link {
7   padding-right: .5rem !important;
8   padding-left: .5rem !important;
9 }
10
11 /* Fixes dropdown menus placed on the right side */
12 .ml-auto .dropdown-menu {
13   left: auto !important;
14   right: 0px;
15 }
16
```

Untuk *routing* halaman, silahkan ubah kodingan pada file **app-routing.module.ts** seperti pada gambar di bawah ini.

```

EXPLORER
OPEN EDITORS
  app-routing.module.ts src\app 1, U
SECOND-APP
  e2e
  node_modules
  src
    app
      home
      voting
        voting.component.html U
        voting.component.scss U
        voting.component.spec.ts U
        voting.component.ts U
      app-routing.module.ts 1, U
      app.component.html U
      app.component.scss U
      app.component.spec.ts U
      app.component.ts U
      app.module.ts U
src > app > app-routing.module.ts > ...
1  import { VotingComponent } from './voting/voting.component';
2  import { HomeComponent } from './home/home.component';
3  import { NgModule } from '@angular/core';
4  import { Routes, RouterModule } from '@angular/router';
5
6
7  //Deklarasi Routing untuk perpindahan halaman
8  const routes: Routes = [
9    {path: '', component: HomeComponent},
10   {path: 'voting', component: VotingComponent}
11 ];
12
13 @NgModule({
14   imports: [RouterModule.forRoot(routes)],
15   exports: [RouterModule]
16 })
17 export class AppRoutingModule { }
18

```

LIHAT HASILNYA DI BROWSER, CEK APAKAH ROUTING BERJALAN DENGAN BAIK???

Sekarang, kita akan bermain di halaman home. Kita akan bermain dengan object kali ini. Pertama, kita akan membuatkan sebuah model data. *Create file* baru secara manual saja. Namakan *file* tersebut dengan nama **superhero.ts** letakkan *file* tersebut di folder home seperti pada gambar di bawah. Silahkan isi kodingannya seperti gambar.

```

EXPLORER
OPEN EDITORS
  superhero.ts src\app\home 1, U
SECOND-APP
  e2e
  node_modules
  src
    app
      home
        home.component.html U
        home.component.scss U
        home.component.spec.ts U
        home.component.ts U
        superhero.ts 1, U
src > app > home > superhero.ts > ...
1  //Model data dari Superhero
2  export class SuperHero {
3
4      constructor(
5          public id: number,
6          public name: string,
7          public weapon: string,
8          public speciality: string,
9          public realname?: string
10     ) {
11
12     }
13

```

Oke, sekarang kita buat deklarasi variable dan kawan-kawannya di file **home.component.ts**

```

src > app > home > home.component.ts > HomeComponent
1  import { SuperHero } from './superheros';
2  import { Component, OnInit } from '@angular/core';
3
4  @Component({
5    selector: 'app-home',
6    templateUrl: './home.component.html',
7    styleUrls: ['./home.component.scss']
8  })
9  export class HomeComponent implements OnInit {
10
11    id: number;
12
13    weapons = ['Iron Suit', 'Hammer', 'Bow and Arrow', 'Shield', 'Raw Power'];
14
15    specialities = ['Technology', 'God of Thunder', 'Archery', 'War & Leadership', 'Scientist'];
16
17    model = new SuperHero(1, "Iron Man", this.weapons[0], this.specialities[0], "Tony Stark");
18
19    submitted = false;
20
21    ngOnInit() {
22      this.id = 0;
23    }
24
25    //logic ketika submit form
26    onSubmit() {
27      this.submitted = true;
28      console.log('this.model.name ' + this.model.name);
29      console.log('this.model.weapon ' + this.model.weapon);
30      console.log('this.model.speciality ' + this.model.speciality);
31    }
32
33    //reset form ketika klik New SuperHero
34    newSuperHero() {
35      this.id = this.id + 1;
36      this.model = new SuperHero(this.id, '', '', '');
37    }
38
39

```

Untuk *styling* halaman home kita, silahkan ketik ulang kodingan file **home.component.scss** seperti pada gambar berikut.

```

src > app > home > home.component.scss > ...
1  .ng-valid[required], .ng-valid.required{
2    border-left: 5px solid #42A948;
3  }
4
5  .ng-invalid:not(form){
6    border-left: 5px solid #a94442;
7  }
8

```

Sekarang, mari kita mulai membuat tampilan `home.component.html` kita.

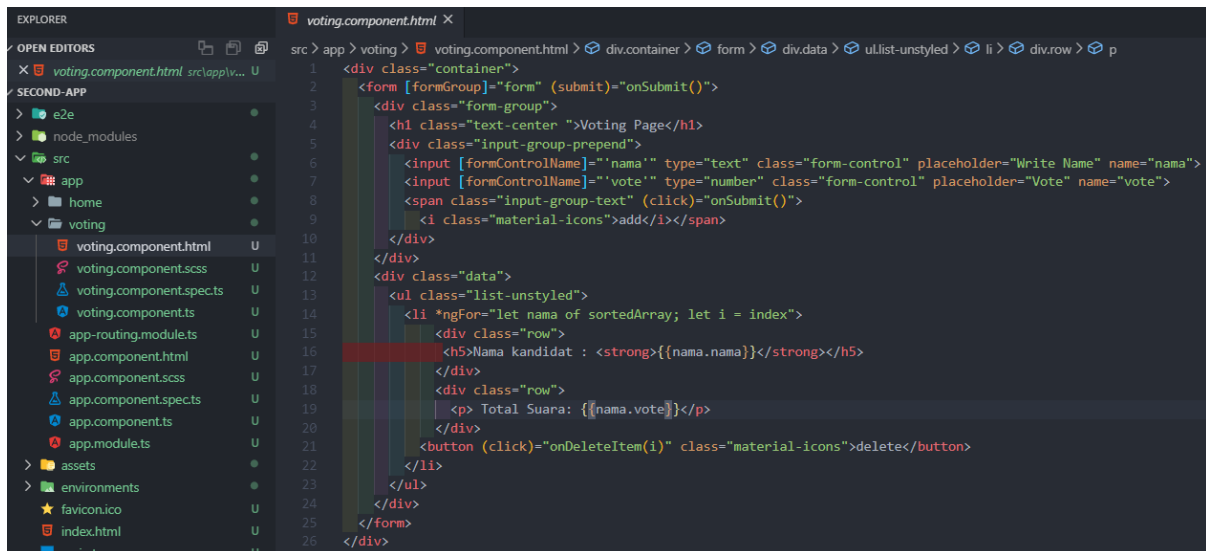
```

1 <div class="container">
2   <div [hidden]="submitted">
3     <h1>Super Hero Form</h1>
4     <form #superheroForm="ngForm" (ngSubmit)="onSubmit()">
5       <div class="form-group">
6         <label for="name">Super Hero Name</label>
7         <input type="text" class="form-control" id="name" required [(ngModel)]="model.name" name="name" #name="ngModel">
8
9         <div [hidden]="name.valid || name.pristine" class="alert alert-danger">
10           Super Hero Name is required
11         </div>
12
13       </div>
14
15       <div class="form-group">
16         <label for="weapon">Hero Weapon</label>
17         <select class="form-control" id="weapon" required [(ngModel)]="model.weapon" name="weapon" #weapon="ngModel">
18           <option *ngFor="let wp of weapons" [value]="wp">{{wp}}</option>
19         </select>
20         <div [hidden]="weapon.valid || weapon.pristine" class="alert alert-danger">
21           Weapon is required
22         </div>
23       </div>
24
25       <div class="form-group">
26         <label for="speciality">Speciality</label>
27         <select class="form-control" id="speciality" required [(ngModel)]="model.speciality" name="speciality"
28           #speciality="ngModel">
29           <option *ngFor="let spec of specialities" [value]="spec">{{spec}}</option>
30         </select>
31         <div [hidden]="speciality.valid || speciality.pristine" class="alert alert-danger">
32           Speciality is required
33         </div>
34       </div>
35
36       <div class="form-group">
37         <label for="realname">Real Name</label>
38         <input type="text" class="form-control" id="realname" [(ngModel)]="model.realname" name="realname">
39       </div>
40       <button type="submit" [disabled]="!superheroForm.form.valid" class="btn btn-success">Submit</button>
41       <button type="button" class="btn btn-default" (click)="newSuperHero(); superheroForm.reset()">New Super
42         Hero</button>
43     </form>
44   </div>
45
46   <!-- Ketika tombol submit ditekan, maka tampilan di bawah ini akan dijalankan -->
47   <div [hidden]="!submitted">
48     <h2>You submitted the following:</h2>
49     <div class="row">
50       <div class="col-xs-3">
51         <h5>Super Hero Name : </h5>
52       </div>
53       <div class="col-xs-9">
54         <p>{{model.name}}</p>
55       </div>
56     </div>
57     <div class="row">
58       <div class="col-xs-3">
59         <h5>Real Name : </h5>
60       </div>
61       <div class="col-xs-9">
62         <p>{{model.realname}}</p>
63       </div>
64     </div>
65     <div class="row">
66       <div class="col-xs-3">
67         <h5>Weapon : </h5>
68       </div>
69       <div class="col-xs-9">
70         <p>{{model.weapon}}</p>
71       </div>
72     </div>
73     <div class="row">
74       <div class="col-xs-3">
75         <h5>Speciality : </h5>
76       </div>
77       <div class="col-xs-9">
78         <p>{{model.speciality}}</p>
79       </div>
80     </div>
81     <br>
82     <button class="btn btn-primary" (click)="submitted=false">Edit</button>
83
84   </div>
85 </div>
86
87 </div>
88

```

SAMPAI DI SINI, JALANKAN HASILNYA DI BROWSER ANDA MASING-MASING. COBA ISI FORM DAN SUBMIT HASILNYA, LALU EDIT FORM. APA YANG TERJADI? LALU COBA JUGA, KLIK TOMBOL 'NEW SUPERHERO'. SEGERA TANYAKAN KEPADA ASLAB MASING-MASING DETAILNYA.

Oke, sekarang kita akan bermain dengan halaman voting. Ubah halaman **voting.component.html** seperti gambar di bawah.



```

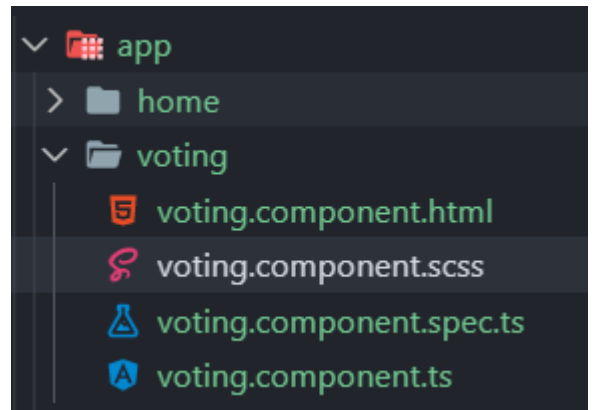
1 <div class="container">
2   <form [formGroup]="form" (submit)="onSubmit()">
3     <div class="form-group">
4       <h1 class="text-center">Voting Page</h1>
5       <div class="input-group-prepend">
6         <input [formControlName]="nama" type="text" class="form-control" placeholder="Write Name" name="nama">
7         <input [formControlName]="vote" type="number" class="form-control" placeholder="Vote" name="vote">
8         <span class="input-group-text" (click)="onSubmit()">
9           <i class="material-icons">add</i></span>
10      </div>
11    </div>
12    <div class="data">
13      <ul class="list-unstyled">
14        <li *ngFor="let nama of sortedArray; let i = index">
15          <div class="row">
16            <h5>Nama kandidat : <strong>{{nama.nama}}</strong></h5>
17          </div>
18          <div class="row">
19            <p>Total Suara: {{nama.vote}}</p>
20          </div>
21          <button (click)="onDeleteItem(i)" class="material-icons">delete</button>
22        </li>
23      </ul>
24    </div>
25  </form>
26 </div>

```

Gunakan kodingan **voting.component.scss** seperti gambar di bawah untuk *styling* nya.

LANJUT DI HALAMAN BAWAH YA...


```
1 @import url('https://fonts.googleapis.com/css?family=Raleway');
2
3 body {
4   padding: 0;
5   margin: 0;
6 }
7
8 form {
9   max-width: 30em;
10  margin: 4em auto;
11  position: relative;
12  background: #f4f4f4;
13  padding: 2em 3em;
14  overflow: hidden;
15 }
16
17 form h1 {
18   font-family: "Raleway";
19   color: rgb(23, 97, 233);
20 }
21
22 form input[type=text]::placeholder {
23   font-family: "Raleway";
24   color: rgb(23, 97, 233);
25 }
26
27 form .data {
28   margin-top: 1em;
29 }
30
31 form .data li {
32   background: #fff;
33   border-left: 4px solid #F97300;
34   padding: 1em;
35   margin: 1em auto;
36   color: #666;
37   font-family: "Raleway";
38 }
39
40 form .data li i {
41   float: right;
42   color: #888;
43   cursor: pointer;
44 }
45
46 form .input-group-text {
47   background: rgb(23, 97, 233);
48   border-radius: 50%;
49   width: 5em;
50   height: 5em;
51   padding: 1em 23px;
52   color: #fff;
53   position: absolute;
54   right: 13px;
55   top: 68px;
56   cursor: pointer;
57 }
58
59 form .input-group-text i {
60   font-size: 2em;
61 }
62
63 form .form-control {
64   height: 3em;
65   font-family: "Raleway";
66 }
67
68 form .form-control:focus {
69   box-shadow: 0;
70 }
71
```

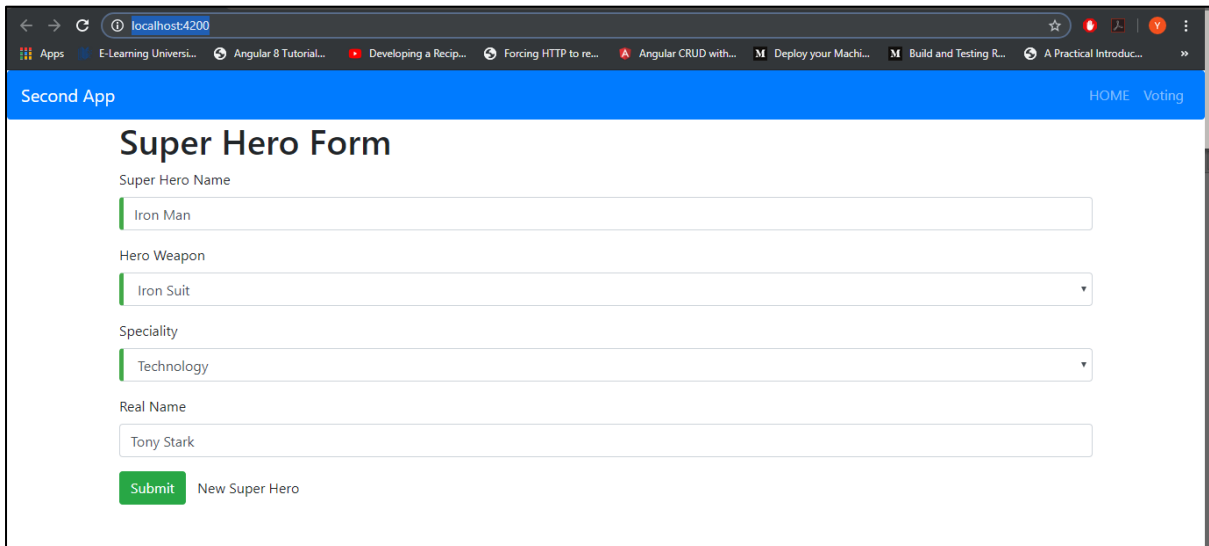


Sekarang, kita akan menuliskan *logic* untuk halaman voting. Ubah kodingan halaman **voting.component.ts** seperti pada gambar di bawah ini.

```
1 import { Component, OnInit, HostBinding, Input } from '@angular/core';
2 import { FormGroup, FormBuilder, Validators } from '@angular/forms';
3
4
5 export interface TampungSuara{
6   nama: string;
7   vote: number;
8 }
9 @Component({
10   selector: 'app-voting',
11   templateUrl: './voting.component.html',
12   styleUrls: ['./voting.component.scss']
13 })
14
15
16 export class VotingComponent implements OnInit {
17   //menyediakan array kosong untuk menampung voting
18   tampungan: TampungSuara[] =[];
19
20   public form: FormGroup;
21   constructor(private fb: FormBuilder) { }
22
23   ngOnInit(): void {
24     this.constructForm();
25   }
26
27   //Validasi form
28   constructForm() {
29     this.form = this.fb.group({
30       nama: this.fb.control(null, Validators.required),
31       vote: this.fb.control(null, Validators.required)
32     });
33   }
34
35
36   //logic ketika tombol ditekan
37   onSubmit() {
38     //Tampung objek interface di variable tampung
39     let tampung: TampungSuara = {nama: this.form.get('nama').value, vote: this.form.get('vote').value}
40
41     if (this.form.invalid) { return; }
42     this.tampungan.push(tampung);
43     this.form.reset();
44   }
45
46   onDeleteItem(index) {
47     if(confirm("Want to delete it?")){
48       this.tampungan.splice(index, 1);
49     } else{
50       console.log('cancel');
51     }
52   }
53
54   get sortedArray(){
55     return this.tampungan.sort((a: TampungSuara, b: TampungSuara) => b.vote - a.vote);
56   }
57
58 }
59
```

Sampai di sini tutorial kita. Coba jalankan halaman voting. Apakah data yang dimasukkan di-sort otomatis berdasarkan jumlah voting??? Tanyakan kepada aslab anda untuk cara kerja lebih detail. Logika-logika dalam tutorial ini akan sangat berguna untuk tugas akhir anda.

Beginilah tampilan akhir dari aplikasi kita



Second App HOME Voting

Super Hero Form

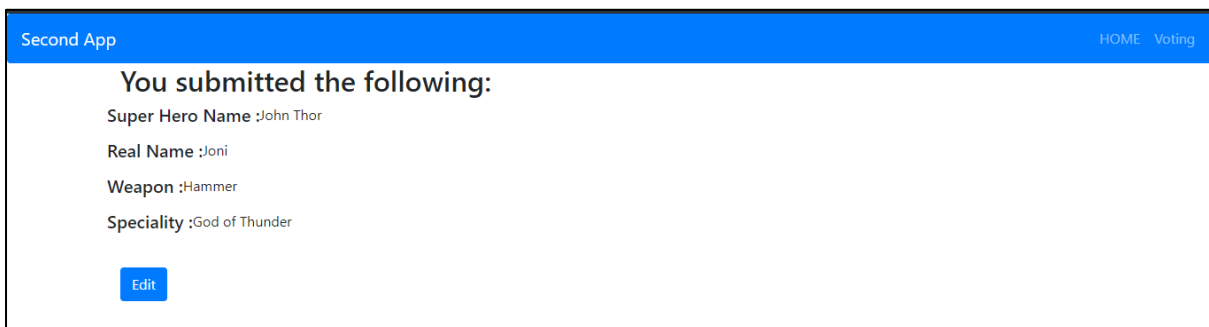
Super Hero Name

Hero Weapon

Speciality

Real Name

[New Super Hero](#)



Second App HOME Voting

You submitted the following:

Super Hero Name :John Thor

Real Name :Joni

Weapon :Hammer

Speciality :God of Thunder

Second App

HOME Voting

Super Hero Form

Super Hero Name

Hero Weapon

Speciality

Real Name

New Super Hero

Voting Page

add

Nama kandidat : **Yehezkiel Gunawan**

Total Suara: 5

Nama kandidat : **Ujang Lafet**

Total Suara: 4

Nama kandidat : **Agus Botak**

Total Suara: 3